



Program. controller, 6 relays

MCX06D

Electronic controller suitable for all HVAC/R software application needs.

Description

MCX06D is fitted with graphic LCD display or without display. It is an electronic controller that holds all the typical functionalities of MCX controllers in the compact size of 4 DIN modules: programmability, connection to the CANbus local network, Modbus RS485 opto-insulated serial interface.

Features & Benefits

- Inputs: 4 analog and 8 digital
- Outputs: 3 analog and 6 digital
- Power supply 20 / 60 V DC - 24 V AC
- Remote access to data through CANbus connection for additional display (LCD available) and keyboard
- RTC clock for managing weekly time programs and data logging information
- Modbus RS485 opto-insulated serial interface
- Available with graphic LCD display or without display for showing the desired information
- Dimensions 4 DIN modules

Ordering

Product code numbers

Type	Material Description	Packing format	Quantity per packing format	Code number
MCX06D	MCX06D Elect.Control 24V LCD S	Single pack	1	080G0111
MCX06D	MCX06D Elect.Control 24V LCD RS485 S	Single pack	1	080G0112
MCX06D	MCX06D Elect.Control 24V RS485 S	Single pack	1	080G0115
MCX06D	MCX06D Elect.Control 24V LCD I/32	Industrial pack	32	080G0166
MCX06D	MCX06D Elect.Control 24V LCD RS485 I/32	Industrial pack	32	080G0167
MCX06D	MCX06D Elect.Control 24V RS485 I/32	Industrial pack	32	080G0169

Note: Single pack codes include standard kit connectors, industrial pack codes don't include standard kit connectors.

Accessories code numbers



080G0179

Electron. control accessories, ACCCNX Connectors MCX/EXC06D, MCX series

ACCCNX Connectors MCX/EXC06D, Used for product: MCX series, Packing format: Multi pack, Quantity per packing format: 100

Related products

080G0109

080G0111

080G0112

080G0115

080G0165

080G0166








080G0167

080G0169

Overview

Product portfolio

Table: Portfolio overview

MCX family	MCX06C	MCX06D	MCX061V	MCX08M2	MCX152V	MCX15B2	MCX20B2
Product image							
Power supply	24 V	24 V	24 V or 110/230 V	24 V or 110/230 V	24 V or 110/230 V	24/110/230 V	24/110/230 V
Built-in display (optional)	LED	LCD	LCD	LCD	LCD	LCD	LCD
Analog Inputs	4	4	7	8	14	10	16
Digital Inputs	6	8	8	8	18	22	22
Analog Outputs	2	3	3	4	6	6	6
Digital Outputs	6	6	6	8	15	15	20
EXV driver embedded			1		2		
RS485	1	1	1	1	2	1	2
CANbus	•	•	•	•	•	•	•
Ethernet / Web server			optional		optional	•	•
USB/Memory Card			•		•	•	•
Dimensions (1 DIN module = 17,5 mm)	33 x 75 mm	4 DIN	8 DIN	8 DIN	16 DIN	16 DIN	16 DIN

Product details

General data

Table: General features

Features	Description
Power supply	20 / 60 V DC and 24 V AC \pm 15% 50/60 Hz SELV
	Maximum power consumption: 6 W, 9 VA
	Insulation between power supply and the extra-low voltage: functional
Plastic housing	DIN rail mounting complying with EN 60715
	Self extinguishing V0 according to IEC 60695-11-10 and glowing / hot wire test at 960 °C according to IEC 60695-2-12
Ball test	125 °C according to IEC 60730-1
	Leakage current: \geq 250 V according to IEC 60112
Operating conditions	CE: -20T60 / UL: 0T55, 90% RH non-condensing
Storage conditions	-30T80, 90% RH non-condensing
Integration	In Class I and / or II appliances
Index of protection	IP40 only on the front cover
Period of electric stress across insulating parts	Long
Resistance to heat and fire	Category D
Immunity against voltage surges	Category II
Software class and structure	Class A

Input/Output

Table: Analog inputs

Type	Num	Specifications
NTC 0 / 1 V 0 / 5 V	2	AI1, AI2 Analog inputs selectable via software between: <ul style="list-style-type: none"> • NTC temperature probes, default: 10 kΩ at 25 °C • Pressure transducers with 0/5 V output • 0/5V type: impedance is 18 kΩ
Universal	2	AI3, AI4 Universal analog inputs selectable via software between: <ul style="list-style-type: none"> • ON/OFF (current: 20 mA) • 0 / 1 V, 0 / 5 V, 0 / 10 V • 0 / 20 mA, 4 / 20 mA • NTC (10 kΩ at 25 °C) • Pt1000 12 V+ power supply 12 V DC, 50 mA max for 4 / 20 mA transmitter (total on all outputs). 5 V+ power supply 5 V DC, 80 mA max for 0 / 5 V transmitter (total on all outputs). 0/5V type: impedance is 18 k Ω 0/10V type: impedance is 2 k Ω

Table: Digital inputs

Type	Num	Specifications
Voltage free contact	6	DI1, DI2, DI3, DI4, DI5, DI6, DI7, DI8 Current consumption: 5 mA

Table: Analog outputs

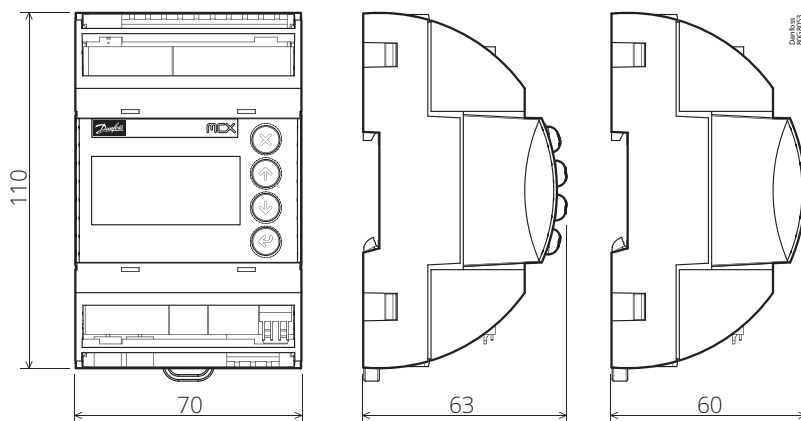
Type	Num	Specifications
0 / 10 V PWM PPM	1	AO1, AO2 Analog outputs selectable via software between: <ul style="list-style-type: none"> pulsing output, synchronous with the line, at modulation of impulse position (PPM) or modulation of impulse width (PWM): <ul style="list-style-type: none"> open circuit voltage: 6.8 V minimum load 1 kΩ (10 mA) pulsing output, at modulation of impulse width (PWM) with range 100 – 500 Hz: <ul style="list-style-type: none"> open circuit voltage: 6.8 V minimum load 1 kΩ (10 mA) 0 / 10 V DC non optoinsulated output, referred to the ground <ul style="list-style-type: none"> minimum load 1 kΩ (10 mA)
PWM PPM	1	AO3 Analog output selectable via software between: <ul style="list-style-type: none"> pulsing output, synchronous with the line, at modulation of impulse position (PPM) or modulation of impulse width (PWM): <ul style="list-style-type: none"> open circuit voltage: 6.8 V minimum load 1 kΩ (10 mA) pulsing output, at modulation of impulse width (PWM) with range 100 – 500 Hz: <ul style="list-style-type: none"> open circuit voltage: 6.8 V minimum load 1 kΩ (10 mA)

Table: Digital outputs

Type	Num	Specifications
Relay	6	<p>Insulation between relays 1 to 5: functional</p> <p>Insulation between relay 6 and the other relays: reinforced</p> <p>Insulation between relays and the extra-low voltage parts: reinforced</p> <p>Total current load limit: 33 A</p> <p>C1-NO1, C2-NO2, C3-NO3, C4-NO4, C5-NO5</p> <p>Normally open contact relays 5 A</p> <p>Characteristics of each relay:</p> <ul style="list-style-type: none"> 5 A 30 V DC / 250 V AC for resistive loads - 100.000 cycles 0.7 A 250 V AC for inductive load - 100.000 cycles with $\cos(\phi) = 0.5$ UL: 250 V AC - 3 A resistive - 1.5 FLA - 9.0 LRA - 144 V A pilot duty 30.000 cycles <p>NC6-C6-NO6</p> <p>Changeover contacts relay 8 A</p> <p>Characteristics of each relay:</p> <ul style="list-style-type: none"> 8 A 250 V AC for resistive loads - 100.000 cycles 4 A 250 V AC for inductive loads - 100.000 cycles with $\cos(\phi) = 0.6$ UL: 240 V AC - 6 A resistive - 4.9 FLA - 29.4 LRA - 470 V A pilot duty 30.000 cycles

Dimensions & weights

Figure: Dimensions



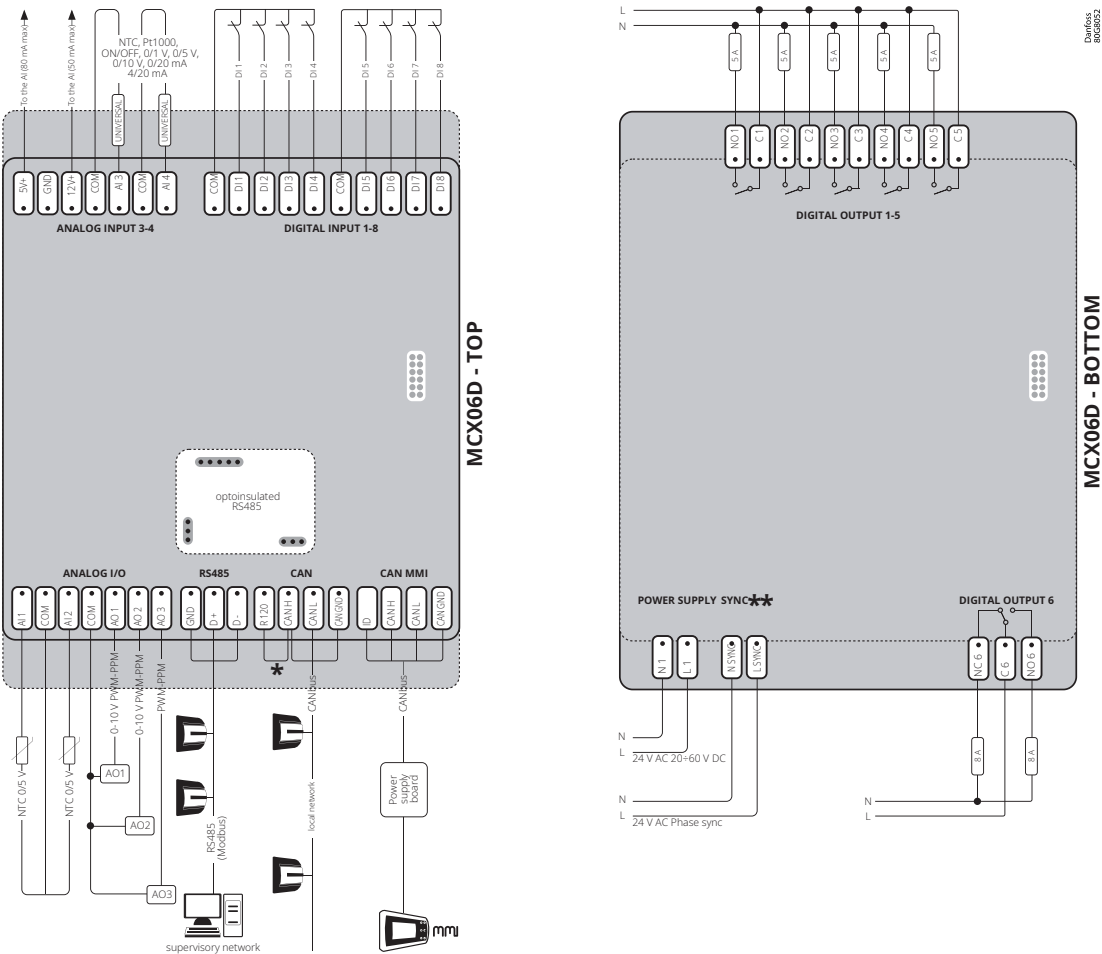
User Interface

Table: User Interface

Type	Features	Description
LCD display	Display	STN blue transmissive
	Backlight	White LED backlight adjustable via software
	Contrast	Adjustable via software
	Format	98 x 64 dots
	Active visible area	29.4 x 19.2 mm
Keyboard	Number of keys	4
	Keys function	Set by the application software

Connections

Figure: Connection diagram



Note:

- *Connection has to be made on the first and last local network units, make the connection as close as possible to the connector
- **When AO is used as synchronized output, the sync input must be in phase with the load on AO.

Table: Top board

Connectors	Type	Dimensions
Analog input 3-4 connector	7 way screw plug-in connector type	<ul style="list-style-type: none">pitch 3.5 mmsection cable 0.08 – 1.5 mm²
Digital input 1-8 connector	10 way screw plug-in connector type	<ul style="list-style-type: none">pitch 3.5 mmsection cable 0.08 – 1.5 mm²
Analog I/O connector	7 way screw plug-in connector type	<ul style="list-style-type: none">pitch 3.5 mmsection cable 0.08 – 1.5 mm²
RS485 connector	3 way screw plug-in connector type	<ul style="list-style-type: none">pitch 3.5 mmsection cable 0.08 – 1.5 mm²
CAN connector	4 way screw plug-in connector type	<ul style="list-style-type: none">pitch 3.5 mmsection cable 0.08 – 1.5 mm²

CAN MMI connector	4 way Connection 2515 Series type (2515-2041) crimping contact type: Connection (2500-2001) instrument for the crimp type 1190-1298	<ul style="list-style-type: none"> section cable AWG22-28 (0.32 – 0.08 mm²)
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Table: Bottom board

Connectors	Type	Dimensions
Digital output 1-5 connector	10 way screw plug-in connector type	<ul style="list-style-type: none"> pitch 5 mm section cable 0.2 – 2.5 mm²
Power supply connector	2 way screw plug-in connector type	<ul style="list-style-type: none"> pitch 3.5 mm section cable 0.08 – 1.5 mm²
Sync connector	2 way screw plug-in connector type	<ul style="list-style-type: none"> pitch 3.5 mm section cable 0.08 – 1.5 mm²
Digital output 6 connector	3 way screw plug-in connector type	<ul style="list-style-type: none"> pitch 5 mm section cable 0.2 – 2.5 mm²

Certificates, declarations and approvals

The list contains all certificates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

When you click on the link you will be directed to the latest version of the 'Declaration of Conformity'. Products developed and sold before this date of issue conform to the directives/standards in force at the time of their sale.

Approval type	Title	Certification body	Approval topic
EU-UK Declaration	Danfoss EU-UK 080R1224.02	Danfoss	LVD
Manufacturer's Declaration	Danfoss MD 080R1240.00	Danfoss	EU RoHS
Manufacturer's Declaration	Danfoss MD 080R4002.01	Danfoss	China RoHS
EAC Declaration	EAC KZ 7100841.13.12.01062	EAC - Eurasian Customs Union	EMC
Electrical Safety Certificate	EAC KZ 7100841.01.01.01245	EAC - Eurasian Customs Union	LVD
UA Declaration	UA 2024-06-27 electr protection units for compressors	Danfoss	LVD
UA Declaration	Danfoss UA 9032	Danfoss	UA RoHS
UA Declaration	Danfoss UA 8537	Danfoss	UA RoHS
Electrical Safety Certificate	UL E31024	UL - Underwriters Laboratories inc.	
Export Control Declaration	MCX programmable controllers	Danfoss	

Contact details

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Danfoss offers a wide range of support along with our products, including digital information, software, mobile apps and expert guidance. See the possibilities below.



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